

MATERIAL SAFETY DATA SHEET**M/L 042**

This Material Safety Data Sheet complies with
US-OSHA Hazard Communication Standard
29 CFR 1910.1200.

PRODUCT: TIN/COPPER/SILVER SOLDER ALLOYS

COMMON NAME OF SYNONYMS: Tin/Copper formulations, and Tin/Copper/Silver formulation (<1% silver content) solders or alloys in the following forms: wire, ingot, pig, cake, rod, anodes, cast or extruded and ribbon. Includes trade name products: Solder Safe and Solder Safe W/Ag.

SECTION I

MANUFACTURERS NAME: Taracorp/IMACO, Inc.
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Winston-Salem, NC 27101
INFORMATION PHONE: 336-777-8600

PREPARATION DATE: June 1998**Revised -** 01/01/02**SECTION II HAZARDOUS INGREDIENTS**

INGREDIEN	CAS NO.	US-NIOSH RTECS NO.	US OSHA AL	US OSHA PEL	ACGIH TLV	WT. PERCENT
Tin	7440-31-5	XP7320000	NE	2.0mg/m3	2.0mg/m3	Balance
Copper	7440-50-8	GL5325000	NE	1.0 mg/m3	1.0 mg/m3	1.0-10.0
	(dust)					
	(fume)			0.1 mg/m3	0.1 mg/m3	

NE=NONE ESTABLISHED AL=ACTION LEVEL PEL=PERMISSIBLE EXPOSURE LIMIT TLV=THRESHOLD LIMIT VALUE

SECTION III PHYSICAL DATA**APPEARANCE & ODOR (AT NORMAL CONDITIONS)**

SPECIFIC GRAVITY (H2O=1) :Solid - silver to silver gray metallic metal- No odor
MELTING POINT RANGE (DEGREES F) :7.39
BOILING POINT (DEGREES C) :227-250 (441-482 Degrees F)
SOLUBILITY IN WATER :Information not available
EVAPORATION RATE (BUTYL ACETATE=1) :Insoluble
VAPOR DENSITY (AIR=1) :Not applicable
VAPOR PRESSURE (mmHg) :Not applicable
PH :Not applicable

SECTION IV EXPLOSION HAZARD DATA

FLASH POINT :Non-Flammable
FLAMMABLE LIMITS :Not Applicable
EXTINGUISHING MEDIA :No specific agents available
SPECIAL FIRE FIGHTING PROCEDURES :If involved in fire, use full protective clothing and NIOSHA/MSHA approved self-contained breathing apparatus operated in a positive-pressure mode.
UNUSUAL FIRE & EXPLOSION HAZARDS :The solid metal form is not a fire hazard. However, dust generated from processing operations may present a moderate fire or explosion hazard.

SECTION V REACTIVITY DATA

STABILITY :Stable
CONDITIONS TO AVOID :Not Applicable
INCOMPATIBILITY :Chlorine, Turpentine, Marnesium, Acetylene Gas
HAZARDOUS DECOMPOSITION PRODUCTS :At temperatures above the melting point metal oxide fumes may be evolved.
HAZARDOUS POLYMERIZATION :Will not occur.

SECTION VI HEALTH HAZARD DATA

NOTE: Exposure to the solid form of this product presents few health hazards in itself. However, normal handling or processing of this material may result in the generation of tin and copper dusts and/or fumes, which may present a health hazard.

ROUTES OF ENTRY :Inhalation of dust/fume & ingestion of dust.

SYMPTOMS & EFFECTS OF OVEREXPOSURE : Chronic (prolonged) overexposure to tin can result in benign pneumoconiosis (stannosis). This form of pneumoconiosis produces progressive x-ray changes of the lungs as long as exposure exists, but there is no distinctive fibrosis, no evidence of disability and no special complicating factors. Acute (severe short-term) overexposure to tin can cause irritation of the eyes, skin, mucous membranes and respiratory system. Acute overexposure to tin can cause irritation of the eyes, skin mucous membranes and respiratory system. Acute overexposure to Copper dusts or fumes can cause metal fume fever with flu-like symptoms such as sweet metal taste, dry throat, coughing, fever and chills, tight chest, dyspnea, headache, blurred vision, back pain, nausea, vomiting, fatigue. Symptoms usually disappear within 24 hours. Copper may cause skin and hair discoloration. Inhalation of copper dusts may cause changes in the gums and mucous lining of the mouth which is generally attributable to localized tissue effect rather than general toxicity.

MEDICAL CONDITIONS POSSIBLE

AGGRAVATED BY EXPOSURE : Pre-existing conditions of the lungs. Wilson's Disease (Genetic Trait)

CARCINOGENICITY : Not listed as a carcinogen by NTP, IARC, OSHA, ACGIH

EMERGENCY & FIRST AID PROCEDURES **SKIN:** Normal hygiene procedures - wash with soap and water. If rash develops get medical attention.

EYES: Flush well with running water to remove. If irritation persists get medical attention.

INHALATION: Remove from exposure. Get medical attention.

INGESTION: Give water; induce vomiting in a individual; medical attention.

particulate.

conscious

SECTION VII PROTECTION MEASURES

RESPIRATORY PROTECTION : Respiratory protection is required where airborne exposures exceed US-OSHA/ACGIH permissible air concentrations. Respirator selection shall be made in accordance with the US OSHA Respiratory Protection Standard, 29CFR 1910.134.

VENTILATION : Ventilation, as described in "Industrial Ventilation, A Manual of Recommended Practice", by the American Conference of Governmental Industrial Hygienists, is recommended to maintain exposure levels below the permissible exposure limits (PEL's) or threshold limit values (TLV's) specified by US-OSHA or other local or state regulations.

PROTECTIVE GLOVES : Recommended for prolonged contact/heat.

EYE PROTECTION : Safety glasses or goggles are recommended where the possibility exists of getting dust particles in the eyes.

Safety glasses with faceshield are recommended around molten metal.

OTHER PROTECTIVE EQUIPMENT Safety equipment should be worn as appropriate for the work environment.

WORK/HYGIENIC PRACTICES : Do not permit eating, drinking, or the use of cosmetics or tobacco products while handling or processing material or in work areas. Practice good personal hygiene procedures. Wash hands and face thoroughly before eating, drinking, applying cosmetics or using tobacco products. Avoid inhalation and ingestion of product, and activities which generate dust or fumes. Keep melting/soldering temperatures as low as possible to minimize the generation of fumes.

SECTION VIII PRECAUTIONS FOR SAFE HANDLING & USE

PRECAUTIONS TO BE TAKEN

IN HANDLING & STORING : Practice good housekeeping procedures to prevent dust accumulations. Keep material dry. Avoid storage near incompatible materials (See Section V). Keep product away from children and their environment.

OTHER PRECAUTIONS : Special attention is drawn to the requirements of the U.S. OSHA Respirator (1910.134) should airborne exposures exceed the U.S. OSHA PEL.

SECTION IX SPILL OR LEAK PROCEDURES

SPILL OR LEAK PROCEDURES : 1) Material in dust form-minimize exposure. Clean up using dustless methods (i.e. Vacuum). Do not use compressed air. 2) Place in closed labeled containers for recycling or disposal. 3) Keep out of waterways.

NOTE: Cleanup personnel should wear protective clothing and respiratory protection where significant dust/fume exposure exists.

OTHER PROCEDURES : We recommend that the purchaser establish a spill prevention, control and counter measure plan. This plan should include procedures for proper storage as well as clean-up of spills or leaks. The procedures should conform to safe practices and provide for proper recovery and/or disposal. Depending on the quantity spilled, notification to the U.S. National Response

Center (800-424-8802) may be required in case of hazardous substances. (See USEPA and USDOT regulations; also various state and local regulations.)

WATER DISPOSAL METHODS : May have value on a recycled basis. If disposed of, dispose of in a permitted disposal site in accordance with all federal, state and local disposal or discharge regulations.

SECTION X UNITED STATES SARA TITLE III INFORMATION

This product/mixture contains the following toxic chemical(s) subject to the reporting requirements of Section 313 of title III of the U.S. Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372. The percent by weight of each toxic chemical and its associated chemical abstract system (CAS) number are to be found in Section II of this Material Safety Data Sheet.

CHEMICAL NAME EHS RQ (LBS) EHS TPQ (LBS) SEC.313 313 CATEGORY 311-312 CATEGORIES

	(*1)	(*2)	(*3)	(*4)
(*5)	Not Applicable	Not Applicable	Yes	Copper

H-1

-FOOTNOTES-

*1= Reportable quantity of extremely hazardous substance, Section 302.

*2= Threshold planning quantity, extremely hazardous substance, Section 302.

*3= Toxic chemical list, Section 313

*4= Chemical category as required by Section 313 (40 CFR 372.42). Subject to annual release reporting requirements.

*5= Hazard category for SARA Section 311/312 reporting:

Health H-1=Immediate (ACUTE) Health Hazard

Physical P-3= Fire Hazard

H-2=Delayed (CHRONIC) Health Hazard

P-4= Sudden Release of Pressure

Hazard

P-5= Reactive Hazard

SECTION XI UNITED STATES CERCLA SECTION 103 INFORMATION

This product/mixture contains the following chemicals subject to the release reporting of Section 302.

CHEMICAL NAME	RQ (LBS)
	(*1)
Copper	5000

-FOOTNOTES-

*1= Reportable quantity (RQ) under CERCLA Section 302. Spills to the environment exceeding the reportable quantity in any 24 hour period must be reported to the U.S. National Response Center (800) 424-8802. No reporting of releases of the hazardous substance(s) is required if the diameter of the pieces of the solid metal(s) released is equal to or exceeds 100 micrometers (0.004 inches).

SECTION XII USDOT TRANSPORTATION INFORMATION (172.101)

DOT SHIPPING NAME	: This product is not regulated by the USDOT as shipped.
HAZARD CLASS	: NOT APPLICABLE
UN/ID NO.	: NOT APPLICABLE
DOT LABELS(S)	: NOT APPLICABLE

SECTION XIII ADDITIONAL INFORMATION

NO ADDITIONAL INFORMATION

This Material Safety Data Sheet is offered solely for your information, consideration and investigation. Taracorp/IMACO, Inc. provides no warranties, either express or implied, and assumes no responsibilities for the accuracy or completeness of the data contained in this document. The data in this Material Safety Data Sheet relates only to this product and does not relate to use in combination with any other material or in any process.